

Raytheon



LSDL Newsletter

Volume 2, Issue 1
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Wayne Hawkins
Director

LSDL Newsletter



Message from the Director

2003 Offers Formidable Challenges

With 2003 underway the challenges for all of us are formidable:

- How do we make our numbers
- How do we fund our new development
- Finding the right partners
- Preparing for our first "Raytheon hosted" EAGLE/iLOG international user conference
- Having fun while doing great things

There are other challenges in front of us but if we focus on these first five, and if we succeed in accomplishing these goals/challenges, I predict we will have another record-breaking year in bookings, sales and earnings.

How will we do this? We will make our numbers if our sales and marketing people give 110% effort all year, we spend our limited resources on potential customers that have a high probability of a return on our investment, and if we all (remember every team member is a potential sales person) work together as a team. If we make our sales numbers we will have the resources required to continue new development (other than that funded by our customers to make modifications to our products).

Finding the right partners is a tough job because when you have great tools every one wants to partner with you. The challenge is to find partners that bring the most value. Our goal is to find partners that can bring customers to the table.

Our first "Raytheon hosted" EAGLE/iLOG international user conference will provide us with a great opportunity to show off our products and our people, but more important it will set the stage for a year end surge and an even greater 2004.

And if we do all of the above, I would suggest it would have been a fun and productive year. ✨

AgustaWestland Company, a Satisfied Customer



Westland Helicopters Ltd facilities in Yeovil, England

One of the greatest feelings of success in this business is when your customers say you are doing a good job, and what you are doing makes a difference in the way they provide support to their customers. I would like to share with all of you one such letter received from Steve Whittaker, on the ILS Systems

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Support Team for Westland Helicopters Ltd:

"In 1997 Westland Helicopters identified a need to replace its existing bespoke LSA application. This application had been developed to the normal MIL-STD-1388-2B tables to include additional tables to store additional information such as Component Life Details, Data Review, and Data Change Management.

After an intense selection process Westland Helicopters selected the Raytheon EAGLE application in 1998. One of the selection criteria had been the willingness of the supplier to include the additional information, which was stored in the existing application database. Raytheon was prepared to build all Westland's existing functionality into EAGLE.



Westland's EH101 Naval Variant

This willingness was again reflected in the pre-delivery liaison established between Westland Helicopter and Raytheon, which involved comprehensive testing of both the 1388-2B elements and the Westland specifics. The final result was the seamless migration of LSA data from the existing system to EAGLE.

Since EAGLE's introduction, Raytheon has provided Westland Helicopters with an excellent support service. The Raytheon Team's knowledge of their product has been exceptional and problems encountered have, in majority of cases, been resolved by the next working day. The speed at which Raytheon responds to problems is further enhanced by their global positioning.

Westland Helicopters Ltd has subsequently requested a number of changes to the non-1388-2B elements on EAGLE. These requests have been fully acknowledged and implemented by Raytheon. Some of these functions are now available to all EAGLE customers, where advice has been requested.

The support given to Westland Helicopters has been instrumental in its decision to buy further Raytheon products such as EAGLE Def-Std 00-60, Data Change Management and ASENT.

Without doubt Westland Helicopters Ltd feels that the winner of the original selection process has provided a first class product by a first class team." ✨



EAGLE Data Configuration Management

The EAGLE Data Configuration Management system is a process tool to be used

with the EAGLE product suite. The EAGLE Data Configuration Management system allows users to create a process for releasing and tracking Logistics Support Analysis Record (LSAR) data. The application consists of three main parts:

- LSAR Review
- LSAR Commenting
- LSAR Configuration Management

The LSAR review tool provides a way to review the LSAR from the systems top level tables. The LSAR commenting tool provides a way for the reviewer to comment on the LSAR while reviewing the data. The LSAR configuration management system provides a way for the reviewer to approve LSAR data for release.

The EAGLE Data Configuration Management System is based on a two tier database design. The two tier databases provides a method to maintain configuration control while allowing users the freedom to make necessary changes in their LSAR database. By having a two tier database, the user is able to use a Working Database to see live data and make required changes while not disturbing the Released Database, which houses the final approved data. All data reviews by the customer, and manuals or reports, are generated from the Released Database, which ensures the appropriate approval and validation process have been performed.

The Working Database is an EAGLE database containing the "live" or "in-work" LSAR data. This database is where the Responsible Logistics Engineers do all their work. Each record that the Responsible Logistics Engineers modifies is checked to see if it is under configuration control before it is saved. If the record is under configuration control, the user is notified and prompted for a logistic change authority in order to save the changes to the data.

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The Released Database is an EAGLE database containing approved and validated LSAR data. Access to this database is restricted since it is under configuration control. The Responsible Logistics Engineers will not be making changes to this database. Changes that the Responsible Logistics Engineer makes in the Working Database are coordinated with the Approval Administrator to be merged into the Released Database. Reports that are delivered to the customer, including the standard LSAR Reports as well as Tech Manuals, IPBs, and RPSTLs will be outputted from the Released Database. Customers will have access to the Released Database for review and commenting on the LSAR data.



RTSC Depots Realize Significant Process Improvement and Cost Savings Using EAGLE Software



The Depot Management Discipline of RTSC's EAGLE Supportability Software Toolset has been implemented at the RTSC Depot Operations Division's Norfolk, VA and Chula Vista, CA Sites. The Automated Management Reporting System (AMRS) is an application modified for the tracking of assets within the depot sites. It is presently used for several programs such as NAVICP, PATRIOT, AEGIS, SEASPARROW and FAA, with plans to implement it on all programs within the depot operations. AMRS provides shared access to repair history and inventory of all assets. AMRS was initially introduced to Raytheon Norfolk depot as part of a replacement for the legacy IPS/IMS information system.

The process improvements incorporated by AMRS were designed after reviewing thousands of lines of code from the legacy systems.

AMRS is used to perform data collection and reporting by using client server and Web based applications, and has the following capabilities:

Material Receipt and barcode tagging, Traveler generator, document that is attached to the asset to be used by technicians and quality personnel to log tasks performed on the asset; asset tracking through bar code reading, failure reporting and corrective actions (FRACAS), system that collects description and location of failure and repair actions on asset failures; Web enabled reports, online on-demand reports generator, allows real-time access to asset status and location; Integrated web enabled tools to facilitate the collection, tracking, storage and shipments of assets.

"The product has significantly improved our ability to track, status and account for repairable material. We now have the ability to establish and measure operations of the repair process against predetermined metrics. These measurements are essential in a depot environment to point out potential "bottle necks". They provide managers the ability to focus in on specific production issues. Process and Costs improvements as great as 75% have been observed in the areas of Receiving Inspection, First Test and Packing.", says Steve Guglielmini, The Depot Operations Division's AMRS Project Manager.

Steve further states, "Prior to AMRS, the status of units waiting for repair parts were provided with no amplifying information such as purchase order number or anticipated delivery dates. AMRS provides a detailed report that interfaces with a procurement data base linking the requirements needed for the repair to the purchase order. A detailed report showing all repair piece parts and their status is now available to manage repairables waiting parts."

EAGLE AMRS integrated web enabled features provide instant access for data collection and reporting. Some of the main modules include:

- **Proof of Receipt System**
The Proof of Receipt application can create and assign a Spare Parts Tracking Number to each serialized/non-serialized asset.
- **Asset Tracker System** - The Asset Tracker application allows the tracking of the assets through the production floor. The application uses bar code readers to collect locations and status.
- **Inventory Management System** -The Inventory Management application maintains storage locations for all assets. The application uses a cordless

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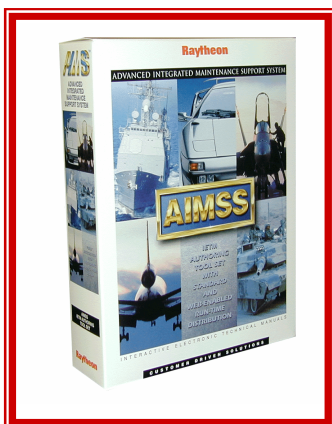
- PDT6800 Bar Code Scanner.
- **Proof of Shipment System** -The Proof of Shipment application tracks the shipment of assets. The application allows the use of bar code scanners to record assets being shipped.
- **CAV vs. AMRS Audit System** -The (Commercial Asset Visibility) CAV vs. AMRS Audit application compares condition codes using repair cycle document numbers (RCDN) between CAV and AMRS. The application allows the identification of inconsistency between both systems.
- **Oracle Report Engine** - The AMRS Oracle report engine allows access to numerous on-demand and scheduled reports virtually anywhere. Reports are directly tie to the database and provide real-time data when accessed.

The Depot Operations Division in implementing AMRS for the NAVICP Performance Based Logistics and Time and Material Contracts. AMRS ongoing projects include incorporating FAA support for site maintenance and site configuration tracking, building more web enabled functionalities and integrating Performance Based Logistics modules to government legacy systems, allowing asset activities to be transmitted to customer systems. Currently AMRS integrated solution and visibility of assets helps depots reduce average days per operations, helps reduce repair cycle times, improves customer satisfaction due to improved repair cycle times and instant asset status, identifies repair operation backlog, and reduces non-value added steps by the use of bar codes and bar code readers to facilitate data collection and movement of assets.

For more information on this product, please contact:
Richard A. Negrón at 757-852-2123.



AIMSS Now Provides Web-Enabled Capability



Our IETM Authoring and Distribution System consists of a suite of products: the AIMSS Authoring Tools Set and the AIMSS Web-Enabled Runtime viewer, which includes the Incremental Distribution System (IDS). The following description specifically highlights our AIMSS Web-Enabled Runtime Viewer.

Features

- Technical documentation distribution and display
- Incremental data update capability
- Support for military Class 4 & 5 standards for IETMs
- Integrated training materials with technical procedures

AIMSS Web-Enabled Runtime Viewer

Used to view the IETMs created with the AIMSS Authoring Tools Set. The AIMSS Web-enabled Runtime product is a web-based Runtime system that provides an environment for displaying and navigating Class 4 and 5 IETMs. It is an XML product that supports the MIL-PRF-87268 specification and fully complies with the Joint IETM Architecture (JIA) Handbook (MIL-HDBK-511). The AIMSS Web-enabled Runtime system is intuitive and requires little or no training.

Single Source Data

AIMSS Web-Enabled Runtime dynamically distributes and displays technical content to different frontline workers from a singular source to maximize efficiency. Technical content is either converted from legacy documentation or created using the AIMSS Authoring Tools Set, and then stored in an XML repository for flexible usage.

Filtered Content

AIMSS Web-Enabled Runtime tailors technical documentation to specific operational situations. By filtering content based on task context, AIMSS Web-Enabled Runtime eliminates lengthy, confusing searches through unnecessary data. Frontline worker efficiency and effectiveness is dramatically increased by eliminating irrelevant information and confusion, contributing to greater equipment uptime.

Integration

AIMSS Web-Enabled Runtime ties easily into existing legacy systems, leveraging investment and extending it in the context of work. Tying technical procedures directly to other systems for work orders, procurement, inventory, testing tools and just-in-time training, significantly increases maintenance efficiency.

Real-time Updates

AIMSS Web-Enabled Runtime updates incremental changes to technical manuals to ensure data is current.

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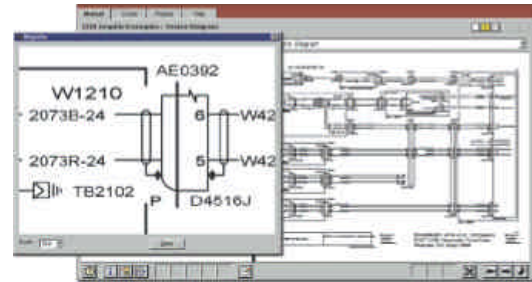


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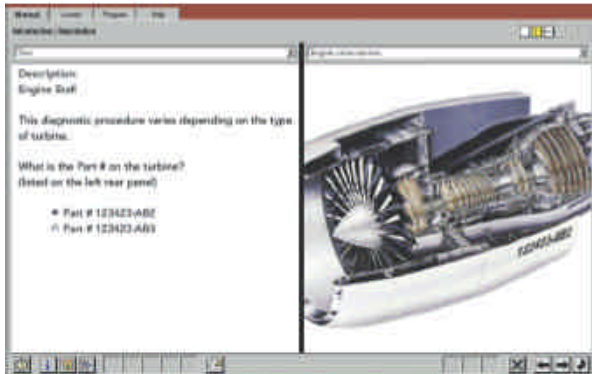
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Authors can make content changes in one location and propagate those changes to all deployment sites. The incremental distribution framework streamlines data transfer over wide-area and wireless networks, by sending only new or modified data to maintenance sites. Frontline workers have immediate access to the latest maintenance and training information at all times, regardless of their location.



AIMSS Web-Enabled Runtime advanced graphics capabilities zoom, magnify, pan and redline complex technical illustrations



AIMSS Web-Enabled Runtime: Class 4 & 5 IETM

IETM Class 4 & 5 Support

AIMSS Web-Enabled Runtime supports the U.S. Department of Defense Class 4 & 5 standards for Interactive Electronic Technical Manual (IETM) distribution and presentation.

Technology

AIMSS Web-Enabled Runtime displays Class 4 and 5 Interactive Electronic Technical Manuals (IETMs). These extended IETMs are hierarchically structured with content grouped into small, reusable logical blocks, affording exceptional update efficiency and usage accuracy. Technical manual content is managed by a database and interactive features are authored into the content itself. Class 5 IETMs link directly to the maintenance network, and navigation is assisted by an expert system based on information gathered during the maintenance session.

The AIMSS Web-Enabled Runtime can utilize identical technical data for simultaneous supply, training, and troubleshooting, and ties into procurement and inventory systems for higher efficiency. Technical content is stored, updated, transmitted and displayed via XML for optimal flexibility. Technical manuals are available through an ordinary web browser for simple, worldwide deployment.

As a part of AIMSS Web-Enabled Runtime, the Incremental Distribution System (IDS) streamlines data transfer over wireless networks by only sending new and

modified data to maintenance sites. Since the data is XML and stored in databases, change detection is accurate to a fine granularity, and new versions of technical content are immediately available to frontline workers.

For information on **AIMSS**, please contact
Robert Schwarzberg
Telephone: 310.952.4308



Supporting Key Programs For Missile Defense

ASENT supports the design analysis of some of today's most demanding systems. Included in these are key programs that support our nation's missile defense systems, in which Raytheon plays an integral role. Patriot



is a long-range, high-altitude, all-weather system designed to defeat threats such as aircraft, tactical ballistic missiles, and cruise missiles.

Patriot's lower-tier air defense is part of a two-tier defense against possible threats. The Theater High-Altitude Area Defense (THAAD) system is the upper tier of the Army's two-tier Theater Missile Defense Concept.

The National Missile Defense X-Band Radar is a large, phased-array fire control sensor, featuring precision discrimination and interceptor support.

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Land-based systems are currently under development. Systems consist of a Ground Based Radar (GBR) along with a small number of Ground Based Interceptors (GBIs), comprised of kill vehicles integrated with booster rocket motors.

Additionally, space-based early warning satellites and ground-based Upgraded Early Warning Radars (UEWRs) will detect hostile missile launches and provide guidance to ground stations. A battle management, command, control, and communication system will provide operational control and a man-in-the-loop interface.

Obviously, systems of this size and complexity require the very best in design analysis tools. ASENT is widely used on these key programs to provide many types of design trade-offs and analyses. This includes failure rate predictions, FMEA/FMECA, testability analysis, and maintainability predictions. ASENT's unique client/server architecture and SQL Server database engine provides the added horsepower needed to easily manage the reams of data associated with these programs. ASENT is specifically designed to allow multiple users concurrent access to the same project data. This allows analyses to be performed in parallel, even when teammates are geographically dispersed.



Raytheon's Upgraded Early Warning Radar (UEWR)

Since all of the tools and data are integrated into one system, ASENT eliminates the challenge of transferring files and combining data and ensures you are always working with the current design.

The ASENT team continues to work very closely with engineers on these programs to provide custom reports and solutions to support their wide range of analysis activities. In addition, the ASENT team provides helpful information for meetings with customers, and recommendations to simplify complicated analysis tasks.

For information on **ASENT**, please contact:
Rich Herman 972.344.6179



EAGLE / iLOG USER CONFERENCE

Raytheon Technical Services Company and Logistic Business Systems Ltd. are hosting the EAGLE / iLOG 2003 User's Conference. This premier event is scheduled for the 19th through the 22nd of October 2003 at the Omni Tucson National Golf Resort and Spa.

The purpose of the conference is to present a forum where EAGLE / iLOG users can network with other customers, partners, and EAGLE / iLOG developers. The conference will provide direct access to senior management and application product developers, who will address various end-user topics through a series of technical sessions, presentations and hands-on demonstrations. Training sessions will address future development plans, introduce powerful new tools and provide useful insights into the use of EAGLE / iLOG products -- directly from the software developers.

There will be a track highlighting product development and demonstration of our other Tools, AIMSS and ASENT. These tools provide Class 4 & 5 IETM and advanced Reliability and Maintainability capabilities that interface with, and enhance, the EAGLE/iLOG tools.

Check our website for updates at www.raytheoneagle.com
call the EAGLE Helpdesk at 520.663.6673
or e-mail us at raytheoneagle@raytheon.com

See you in Tucson! ✨

LATEST VERSION OF OUR TOOLS

AIMSS:	4.4.1 (February 2003)
ASENT:	10.5 (March 2003)
EAGLE:	4.5.1 (February 2003)

LSDL PRODUCT SUPPORT

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Email: reschwarzberg@raytheon.com

For more information on our products:

AIMSS: www.raytheon.com/products/aimss
ASENT: www.raytheon.com/products/asent
EAGLE: www.raytheoneagle.com/

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